REMARKS

The October 21, 2002, Office Action (hereinafter "Office Action") rejected Claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,088,739 to Pugh et al. (hereinafter "Pugh"). Additionally, Claims 1-19 were rejected under the judicially created doctrine of obviousness-type double patenting over then-copending application, now U.S. Patent No. 6,304,879, to Sobeski et al. (hereinafter "Sobeski"). The Office Action rejected applicants' previous response/arguments, suggesting that the previous arguments were based on limitations found in the specification but not in the claims, and rejected the claims due to an "alternative" claim interpretation. Accordingly, while applicants disagree with the propriety of the rejection of the pending claims, in order to advance the prosecution of this application, certain claims have been amended so that they more particularly point out and distinctly claim the subject matter that applicants regard as their invention. Claims 1-19 remain pending in the application, with Claims 1, 9, 16, 17, and 18 being independent. Claim 20 is newly added.

Pursuant to 37 C.F.R. § 1.111, and for the reasons set forth below, applicants respectfully request reconsideration and allowance of this application. Prior to discussing the reasons why applicants believe that the claims pending in this application are allowable, a brief description of the present invention and the cited and applied reference is presented. The following discussion of the present invention and the teachings of the applied reference are not provided to define the scope or interpretation of any of the claims of this application. Instead, they are provided to help the U.S. Patent and Trademark Office better appreciate important claim distinctions discussed thereafter.

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Summary of the Invention:

The present invention is directed at providing dynamic object behavior for individual objects in an object-oriented environment. Prior to the present invention, an individual object's behavior was statically defined. Thus, only through recoding and recompiling the code defining an object could an individual object's behaviors be modified. For example, an object O may have been programmed and compiled to perform behaviors A and B. In order to add behavior C to object O, behavior C had to be programmed into the code of object O and recompiled. Alternatively, if object O were compiled to have behaviors A, B, and C, object O could not choose to not have behavior C.

In contrast to this static nature of prior art objects, the present invention provides dynamic object behavior in individual objects. For example, an object O with behaviors A and B may be modified to also exhibit behavior C, without requiring recoding and recompilation of the object. Alternatively, an object O with behaviors A, B, and C may be instantiated to exhibit only behaviors A and B.

According to the present invention, when an object is instantiated, the object determines its behaviors according to information stored in a data store. Depending on various conditions, including system environment conditions, the object may limit the instantiation of any of the behaviors within the set of possible behaviors in the data store. The behaviors of the object may also be altered in the data store by an instance of the object or by some other object or application, thereby altering the behavior of the object when it is next instantiated, without requiring recoding and recompilation of the object.

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Summary of the Cited References

U.S. Patent No. 6,088,739 to Pugh

Pugh describes a system and method for dynamic object clustering. A clustering mechanism is used to simulate an entity. At the heart of this clustering mechanism is a composite object, also referred to as a cluster, that permits the addition of other objects called role objects. By adding or removing role objects to the cluster, the cluster (i.e., a collection of multiple objects) appears to exhibit dynamic behavioral changes.

However, Pugh does not disclose that individual objects possess the ability to modify their own behavior in a dynamic manner. In other words, each object in a cluster, individually, has only static, fixed behaviors. This is in clear contrast to the present invention, where individual objects may dynamically modify their own behavior.

U.S. Patent No. 6,304,879 to Sobeski

Sobeski discloses dynamic data caching in object-oriented environments. According to Sobeski, external objects may store temporary data or information, also referred to as dynamic properties, within a container object. The container object includes a data object, a data cache object, a controller object, and multiple internal objects. The data cache object temporarily stores data from both internal and external objects. This dynamic data is stored in the container until a command is received to delete the data, or commit the data to a more permanent storage. In this way, the container object "maintains what is known in the art as a dirty state." (Sobeski, Col. 5, lines 51-52.) The data, marked as "dirty," is stored by the object until a command is received to commit the data to storage as described.

Sobeski also refers to both static and dynamic properties of an object. However, Sobeski defines "dynamic properties" as "data that is not permanently associated with the definition of data object 204, as opposed to static properties that always are." (Sobeski, Col. 5, lines 21-23.)

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Static properties are data that do not change, such as default values. Clearly "properties" in Sobeski are data, not object behaviors.

While Sobeski describes caching data, data that may or may not change, Sobeski does not describe modifying the **behavior** of the individual objects.

The Claims Distinguished

102(e) Rejections

Claim 1

Applicants respectfully submit that Pugh fails to disclose each element of independent Claim 1. In particular, Pugh fails to disclose "a single object having a plurality of dynamic behaviors associated with the object," "an application to instantiate the object from the data stored in the data store regarding the plurality of dynamic behaviors," and "wherein the object instantiates at least one of the plurality of dynamic behaviors."

As previously discussed, Pugh purportedly discloses adding and subtracting role objects to a cluster of objects in order to simulate dynamic behavioral changes. However, while Pugh purportedly discloses that the simulated entity, as a whole, may exhibit dynamic behaviors, Pugh does not disclose that individual objects within the cluster have dynamic behaviors. The present invention is not directed at an object cluster, but rather at a single object, wherein that single object has associated, dynamic behaviors. Thus, the present invention makes dynamic behavior possible with single objects, whereas Pugh requires a cluster of objects to simulate dynamic behavior.

Because Pugh does not disclose a single object having a plurality of dynamic behaviors, Pugh can not disclose "instantiat[ing] the object from the data stored in the data store regarding the plurality of dynamic behaviors." Still further, Pugh can not disclose that the single object, during instantiation, instantiates or implements at least one of the plurality of dynamic behaviors

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from the data store. In sum, while Pugh may exhibit apparent dynamic behavior through a cluster of multiple objects, Pugh does not disclose that a single object exhibits a plurality of dynamic behaviors.

For the reasons described above, applicants respectfully assert that Pugh fails to disclose each element of independent Claim 1. Accordingly, applicants request that the 35 U.S.C. § 102(e) rejection of Claim 1 be withdrawn and the claim allowed.

Claims 2-8, 20

As to dependent Claims 2-8, applicants respectfully submit that because Pugh fails to disclose each element of independent Claim 1, upon which Claims 2-8 depend, Pugh also fails to disclose each element of Claims 2-8, especially when considered in conjunction with Claim 1. Accordingly, applicants respectfully request that the 35 U.S.C. § 102(e) rejection of Claims 2-8 be withdrawn and the claims allowed.

Claims 9-19

For the same reasons discussed above in regard to Claim 1, applicants respectfully assert that Pugh fails to disclose each element of Claims 9-19. In particular, while Pugh purportedly discloses a cluster of static objects together simulating an entity having dynamic behaviors, Pugh does not disclose a single object having a plurality of dynamic behaviors.

Accordingly, applicants assert that Pugh fails to disclose each element of Claims 9-19. Applicants respectfully request that the 35 U.S.C. § 102(e) rejections of Claims 9-19 be withdrawn and the claims allowed.

Obviousness-Type Double Patenting Rejection

In regard to the obviousness-type double patenting rejection of Claims 1-19, applicants respectfully submit that the present invention is patentably distinct from Sobeski. As discussed,

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Sobeski describes a data cache object capable of temporarily storing dynamic data. In contrast, the present invention is directed at dynamic behaviors of an individual object.

According to Sobeski, "**Dynamic properties are data** that is not permanently associated with the definition of the data object." (Sobeski, col. 5, lines 21-23.) In contrast, in accordance with the present invention, dynamic behaviors are associated with the definition of an object, i.e., how the object responds, not the values that it stores. To illustrate the differences, assume a data object P can temporarily store a color value, e.g., red, greed, blue, etc. While the data object P can store, as a dynamic property, one of many different color values, the behavior of P is static: temporarily storing a color value. Alternatively, an object D may be associated with multiple dynamic behaviors, e.g., storing color values, modifying screen displays, recording audio clips. When instantiated, object D can select to exhibit any or all of the available behaviors. Thus, object D's behaviors are dynamic. While data object P always stores a color value, object D may or may not store a color value, irrespective of what that value might be. Data object P's dynamism lies in the value that it stores. In contrast, object D's dynamism lies in the behaviors that it implements when created.

For the reasons mentioned above, applicants respectfully assert that the present invention is patentably distinct from that described in Sobeski, and would not be obvious to those of ordinary skill in the art in view of Sobeski. Accordingly, applicants request that the double patenting rejection of Claims 1-19 be withdrawn and the claims allowed.

CONCLUSION

In view of the amendments and remarks above, the applicants respectfully submit that the present application is in condition for allowance. Reconsideration and reexamination of the application, as amended, and allowance of the claims at an early date are solicited. If the

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Examiner has any questions or comments concerning the foregoing response, the Examiner is invited to contact the applicants' undersigned attorney at the number below.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202, on the below date.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE DECEMBER 20, 2002

In the Claims:

1. (Amended) A system comprising:

[an] a single object having a plurality of dynamic behaviors;

a data store to store data regarding the plurality of dynamic behaviors; and,

an application to instantiate the object from the data stored in the data store regarding the plurality of dynamic behaviors,

wherein the object instantiates at least one of the plurality of dynamic behaviors.

6. (Amended) The system of claim 1, wherein the plurality of dynamic behaviors comprises at least one selected from the group essentially consisting of[: a plurality of objects,] a plurality of methods, and a plurality of events.

9. (Amended) A method comprising:

receiving a command to instantiate [an] a first instance of a single object having a plurality of dynamic behaviors associated with the object;

looking up data regarding the plurality of dynamic behaviors in a data store; and,

instantiating the first instance of the object from the data regarding the plurality of dynamic behaviors in the data store.

14. (Amended) The method of claim 10, further comprising:

looking up data regarding the plurality of dynamic behaviors in the data store as have been changed; and,

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instantiating a second instance of the object from the data regarding the plurality of dynamic behaviors as have been stored in the data store, wherein the first and second instances of the object exhibit different dynamic behaviors.

15. (Amended) The method of claim 14, further comprising:

instantiating a [second] data providing object to provide data regarding the plurality of dynamic behaviors; and,

instantiating at least one instance of the object from the data regarding the plurality of dynamic behaviors.

16. (Amended) A computer-readable medium having data stored thereon representing:

[an] a single object having a plurality of dynamic behaviors associated with the object;

a data store to store data regarding the plurality of dynamic behaviors; and,

an application to instantiate the object from the data stored in the data store regarding the plurality of dynamic behaviors.

17. (Amended) A computer-readable medium having a computer program stored thereon for execution on a computer, the program performing the method comprising:

receiving a command to instantiate [an] a first instance of the single object having a plurality of dynamic behaviors associated with the object;

looking up data regarding the plurality of dynamic behaviors in a data store;

instantiating the first instance of the object from the data regarding the plurality of dynamic behaviors in the data store;

changing the plurality of dynamic behaviors;

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looking up data regarding the plurality of dynamic behaviors in the data store as having been changed; and,

instantiating a second instance of the object form the data regarding the plurality of dynamic behaviors as have been changed stored in the data store, wherein the first and second instances of the object do not exhibit the same dynamic behaviors.

18. (Amended) A computer comprising:

a memory;

a processor

a data store of the memory to store data regarding a plurality of dynamic behaviors of [an] a single object; and,

an application executed by the processor from the memory to instantiate the object from the data stored in the data store regarding the plurality of dynamic behaviors.

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